Tanzania: Driving social and economic value through mobile-sector tax reform

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Executive summary

Globally, more than 5 billion people are using mobile technology to access life-enhancing services such as financial services, e-government platforms and digital health services. Mobile is an important driver of economic growth across all sectors. In Africa, the International Telecommunication Union (ITU) estimates that a 10% increase in mobile broadband penetration would yield a 2.5% increase in GDP per capita.[1]

A conducive regulatory environment is required to accelerate countries' digital transformation and maximise the benefits of connectivity for businesses, citizens and governments. An important element of this is the tax framework, which has the potential to unlock digital inclusion by striking the right balance between capturing revenues for government and supporting connectivity adoption and usage.

This report presents the current state of mobile sector taxation in Tanzania and provides recommendations to improve connectivity through tax reform. The study takes a holistic approach and quantifies the impact of reducing the excise duty on mobile airtime from 17% to 12% — on the mobile sector, the wider economy and, in particular, the agricultural and health sectors.

The tax contribution of the mobile sector in Tanzania is considerably higher than the average for Sub-Saharan Africa and also above other regional averages; this could limit the country's transition to a digital economy.

In 2019, mobile market revenue was estimated at $1.1 billion (TZS 2,703 billion), accounting for 1.9% of Tanzania's GDP. In the same year, the total tax contribution of the mobile sector was estimated at $404 million (TZS 932 billion), about 34% of total market revenue. This is well above the level of other regions, including Sub-Saharan Africa (26%). Furthermore, the tax contribution increases to 38% of revenue when withholding taxes are included.

This high tax contribution is driven by the high level of sector-specific taxes (18% of revenue) and by excise duty on mobile airtime in particular. In addition to VAT (18%), mobile services are subject to the second highest excise duty on mobile services (17%) in Sub-Saharan Africa.

1 ITU (2019). Economic contribution of broadband, digitization and ICT regulation Econometric modelling for Africa.

Despite the expansion of mobile coverage, more than half of Tanzania's population (59%) remains unconnected. Reforming mobile taxation could improve affordability and help bridge the usage and coverage gaps.

While mobile coverage has expanded in the past years, about 28 million Tanzanians (48% of the population) live within the footprint of mobile broadband but do not use it (2019). The high level of consumer sector-specific taxes raises the affordability barrier, disproportionately impacting low-income households. In Tanzania, consumer taxes represent a significant share (32%) of the cost of mobile services. This is higher than the average share of consumer taxes in Sub-Saharan Africa (22%). Reforming sector-specific taxes (consumer- and mobile operator-facing) could unlock investment in mobile networks and improve affordability, driving mobile adoption and unleashing the economic potential of the sector.

Mobile is at the centre of Tanzania's digital transformation. Mobile and mobile money services contribute directly to Tanzania's economic growth and social development objectives as set out in the Second National Five Year Development Plan.

An increase in mobile penetration leads to growth in productivity and hence an increase in GDP, household incomes, employment and investment across the economy. Due to the expansion of the mobile sector and the subsequent growth in the wider economy, government revenues are increasing. The agriculture, health and education sectors are examples of industries benefiting from the increase in mobile connectivity.

The agriculture and health sectors would benefit from improved digital inclusion. Indeed, the benefits of tax reform would not be felt only through expanded mobile connectivity but would spread to the wider economy.

Tax reform in the mobile sector would trigger a substantial growth in mobile penetration, usage and migration to new technologies, particularly among low-income groups. This in turn would accelerate the adoption and usage of digital services, transforming key sectors of the economy such as health and agriculture or digital government services. For example, reducing the excise duty on mobile airtime from 17% to 12% would increase mobile penetration by 2.4 million unique subscribers (3.6%), increase government revenue by $58 million per annum and boost GDP by $438 million, five years after the tax reform.

The agriculture and health sectors would benefit from the increased number of Tanzanians connected to mobile internet. The rural households of the new 1.6 million mobile internet users would see their monthly consumption increase by 14% or 71,700 TZS five years after the tax reform. This would result from access to new markets, improved crop management and experimentation with new crops, thanks to their mobile phones. Similarly, by improving access to health information and communication between health practitioners and their patients, it is expected that an additional 66,500 treatments would be delivered to HIV-infected patients every year.

Due to the positive impact of mobile on productivity, reforming mobile-sector taxation would generate higher GDP and tax revenue for the government in the medium term. To increase digital inclusion and benefit from its positive impacts, the following reforms should be prioritised:

- Reduce the excise duty on mobile services
- Reduce the excise duty on mobile money transaction fees

1. Mobile sector taxation in Tanzania

This section provides a detailed overview of mobile sector taxation in Tanzania, including benchmarking and impact on the cost of mobile services.

1.1 The state of mobile in Tanzania

Over the past decade, the mobile market in Tanzania has expanded at a steady pace, with the number of unique subscribers growing from 12 million in 2010 to 25 million in 2020, an increase of about 105%. At the end of 2020, Tanzania had a unique-subscriber penetration of 41% and an unique-subscriber mobile internet penetration of 18%.[2] However, a large proportion of the population (59%) remains unconnected to the mobile network.

By providing connectivity, the mobile sector enables life-enhancing benefits such as financial services via mobile money, access to educational resources and access to connected businesses. In the case of education, mobile not only reinforces traditional teaching methods by providing access to new sources of information, but enables vulnerable and remote communities to benefit from distance-learning solutions. For instance, the educational platform Shule Direct has already reached over 2 million students and 72 school centres in Tanzania.[3] Its SMS based service allows secondary school students to access digital notes, tutorials and other resources directly from their handsets.

For many, mobile is the primary channel for accessing the internet. Mobile is a powerful tool to drive sustainable growth, reduce poverty, and improve healthcare and education. Mobile money fuels economic growth by facilitating savings and investment, creating employment and facilitating payments between persons and governments.[4] Countries with high levels of mobile connectivity have made the most progress in meeting their Sustainable Development Goals (SDGs) commitments.

In addition to its direct tax contributions, the mobile sector also contributes indirectly to government revenue. Mobile services enable the digitalisation of person-to-government (P2G) payments through mobile money. Among the benefits it brings, the digitalisation of P2G payments contributes to increasing government revenue through a reduction of administrative costs, a reduction of leakage and an expansion of the revenue collection base. In 2011, Tanzania Revenue Authority (TRA) enabled tax payments over mobile money and mobile banking for property taxes, personal income tax and presumptive taxes. One year later, 15% of the tax base was using the new mobile payment option and, among those, some did not have a history of paying taxes.[5]

In times of crisis, as with the coronavirus outbreak, mobile services are critical in keeping people connected, enabling business continuity, and preventing service interruption. To mitigate the impacts of the pandemic, the mobile sector took actions such as disseminating public information and health messages, providing free access to digital education services and facilitating use of mobile money.

2 GSMA Intelligence database.
3 GSMA (2020). Education for all during COVID-19: Scaling access and impact of EdTech.
4 GSMA (2019). Harnessing the power of mobile money to achieve the sustainable development goals.
5 GSMA (2020). Digitalising person-to-government payments.

1.2 Usage gap and coverage gap

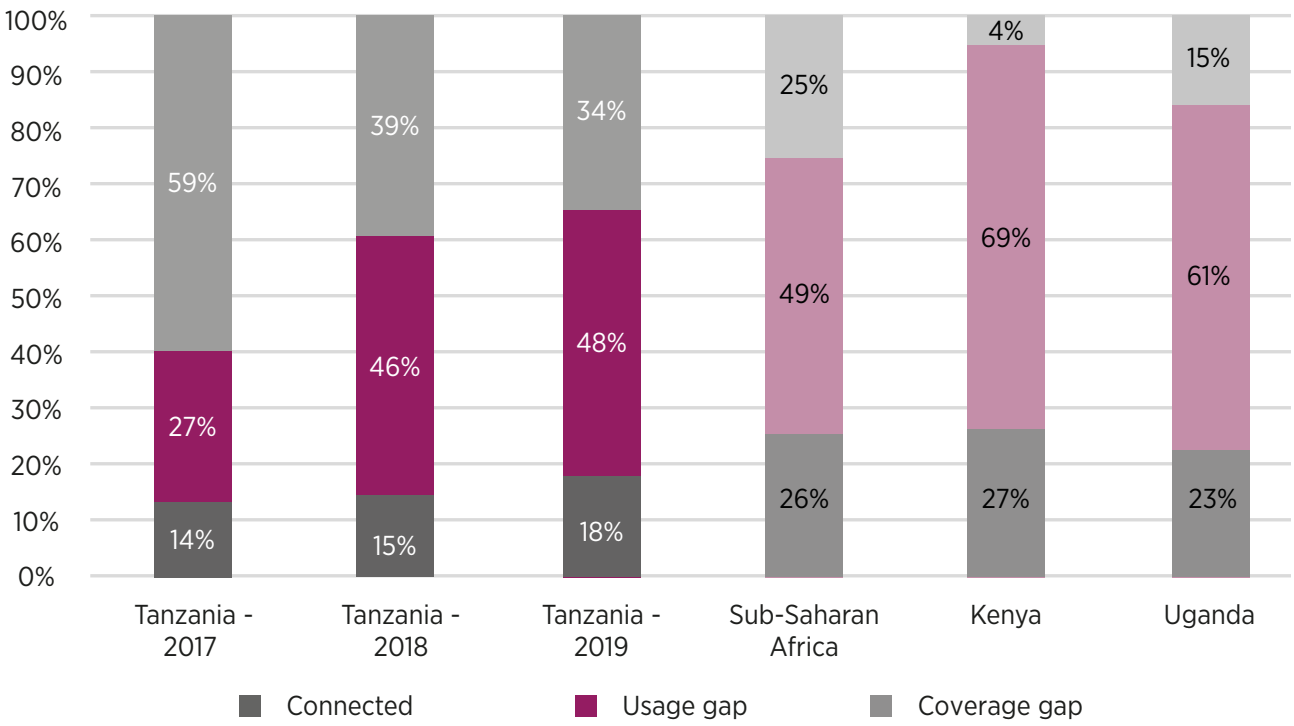
In 2019, the mobile broadband usage gap — defined as the percentage of the population covered by mobile broadband networks but not using mobile internet — stood at 48%. In addition, 34% of the Tanzanian population was not covered by mobile broadband services — the coverage gap — compared to 25% across Sub-Saharan Africa.[6] The penetration of mobile internet (18%) in Tanzania is low compared to Kenya (27%), Uganda (23%) and Sub-Saharan Africa (26%). While the coverage gap (34%) in Tanzania has narrowed in recent years, it is still larger than in Kenya (4%), Uganda (15%) and Sub-Saharan Africa (25%).

To close the usage and coverage gaps, it is necessary to improve access to affordable devices and data plans, build digital skills, invest in local ecosystems to make services more relevant and ensure that the internet is safe and secure to use. Improving the business environment is also needed, to support the significant investment required to achieve universal broadband access.

Figure 1

Usage gap and coverage gap (2019)

Source: GSMA Intelligence



Barriers to using mobile internet include affordability, lack of awareness, illiteracy and lack of digital skills. By increasing the cost of mobile connectivity, sector-specific taxes such as excise duties on mobile services deter the adoption and use of mobile services, for low-income people especially. In turn, it limits the positive impact of mobile services on the economy and society.

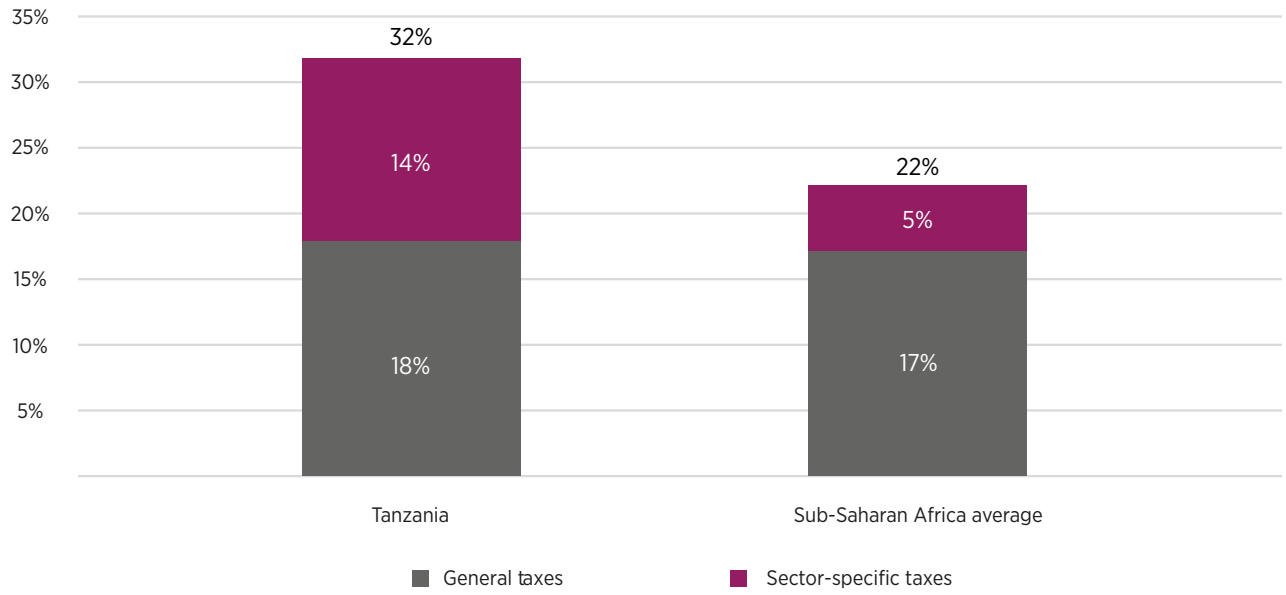
In Tanzania, consumer taxes represent a significant share (32%) of the total cost of mobile ownership (TCMO). This is due to the high level of sector-specific taxes (14% of TCMO) compared to the Sub-Saharan Africa average (4% of TCMO). In addition to VAT (18%), mobile services are subject to the second highest excise duty on mobile services (17%) in Sub-Saharan Africa.[7]

6 Please note that the usage gap and coverage gap refer to citizens connected to mobile broadband (3G and 4G). This is different than the usual metric of mobile services penetration which refers to citizens connected to mobile services (2G, 3G and 4G).
7 Zambia is the only country having a higher excise duty (17.5%).

Figure 2

Consumer taxes as a share of TCMO (2019)

Source: GSMA Intelligence



1.3 Mobile sector taxes and fees

Mobile consumers and operators are subject to various taxes and fees. While some are general taxes and fees applicable to all sectors of the economy, most are specific to the mobile sector. The table below outlines the different taxes and regulatory fees imposed on mobile consumers and operators. Sector-specific taxes are highlighted in purple.

Table 1

Key taxes and regulatory fees paid by mobile consumers and operators (2021)

Consumer taxes

Value added tax (VAT)	
	18%
Excise duties	
• **Electronic communication services**	**17%**
• **Interconnect fee on international calls**	**$0.12 per minute (minimum charge)**
• **Money transfer services**	**10% of transfer and withdrawal fees**
Custom duties	
• **SIM cards and scratch cards** • **Handsets and network equipment**	**25% on cost, insurance and freight (CIF) value** **0%**
Gaming tax	
	20% on net winnings; 25% on gross gaming revenue

Operator taxes and regulatory fees

Corporate income tax	
• Corporate tax	30% of net taxable income
• Alternative minimum tax	0.5% of turnover in third year of consecutive tax loss
Regulatory fees	
• Licence fee	**1% of gross revenue less local interconnect cost**
• Universal service fee	**1% of qualifying turnover less all interconnect cost**
• Numbering fees	**$0.2 per number**
Spectrum fees	
• One-off	**Varies by auction**
• Annual	**Various rates**
Employment taxes	
• Employment tax	0% - 30% depending on income band
• Social security tax	10% employer contribution; 10% employee contribution
• Workers compensation fund	1% of cash sums paid to employees
• Skills development levy	4% of gross cash emoluments of employees
Other taxes	
• Advertising tax	Various rates varying per region
• Stamp duty: Leases	1% of consideration
• Property taxes	Various rates depending on value and location of property
• Municipal Service Levy	0.3% of total turnover (regardless of the regions the company operates in)
Withholding taxes	
• Withholding tax: Dividends	Listed shares: 5%; Standard rate: 10%
• Withholding tax: Interest	10%
• Withholding tax: Foreign services	15%
• Withholding tax: Resident professional services	5%
• Withholding tax: Rent - Land and buildings	10%
• Withholding tax: Rent - Other assets	10% (non-residents only)
• Withholding tax: Directors fees	15%
• Withholding tax: Insurance premium	5% (non-residents only)
• Withholding tax: Mobile money agents' commission	**10% of commission amount**

1.4. Tax contribution of the mobile sector

The total tax contribution of the mobile sector for 2019 is estimated at $404 million (TZS 932 billion). This represents 34% of total mobile-sector revenue.[8]

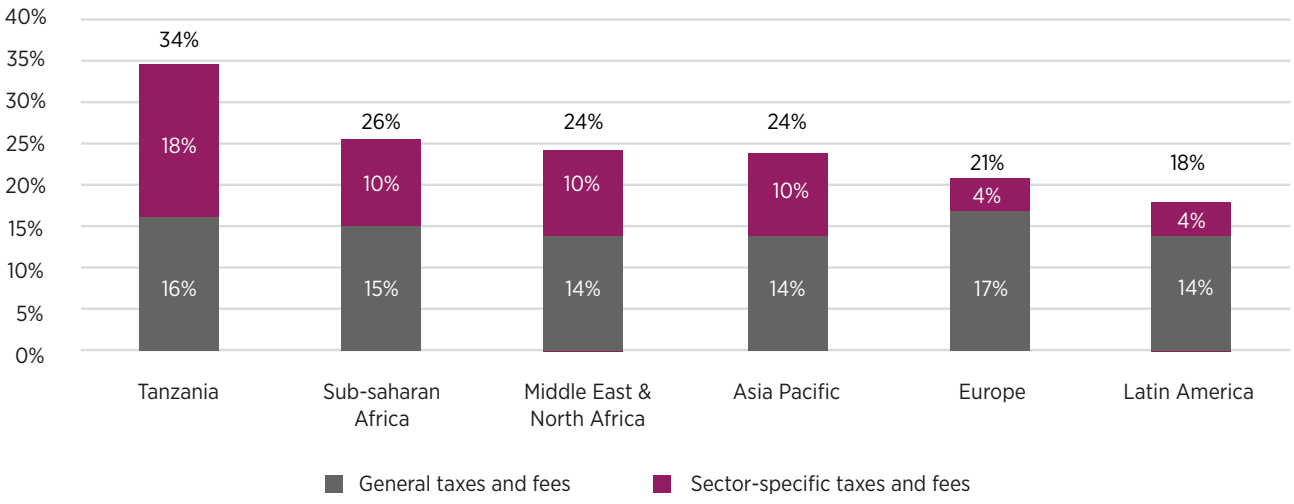
When withholding taxes collected by mobile operators are taken into account, the total tax contribution of the mobile sector represents 38% of sector revenue ($441 million). For 2019, estimated mobile-sector revenue was $1.1 billion (TZS 2,703 billion), accounting for 1.9% of Tanzania's GDP.

Over half of mobile-sector tax payments are for taxes specific to the mobile sector (18% of revenue), which are levied on mobile operators and consumers in addition to other, economy-wide, general taxes (16% of revenue).[9] As shown in the figure below, the mobile sector in Tanzania is subject to a higher level of sector-specific taxes than the Sub-Saharan African average (10%) or any other region in the sample. The high level of sector-specific taxes is driven by a high excise duty on mobile services (17% of voice, SMS and data).

Figure 3

General taxes and fees vs mobile sector-specific taxes and fees (as percentage of mobile sector revenue)[10]

Source: GSMA analysis and operator data.



The mobile sector is a large contributor to government tax revenue. In addition to taxes and fees applicable to the mobile sector (23 in total), mobile operators also collect a high number of withholding taxes (9) on behalf of the government. While these are excluded from our analysis, it is important to note that mobile operators incur an administrative burden in handling withholding taxes that we have not taken into account. The 2019 withholding tax payments was $37 million (TZS 86 billion), representing about 3% of total mobile revenue.

In 2019, the sector's tax and fee payments accounted for around 4.6% of total government tax revenue.[11] As shown in the figure below, the largest share of tax revenues from the mobile sector is from excise taxes on mobile and mobile money services (39% of total tax payments), VAT (33%) and regulatory fees (9%).

8 As per GSMA methodology, these calculations exclude withholding tax payments. When withholding taxes are taken into account, total tax contribution of the mobile sector represents 35% of revenue ($408m). Total mobile sector revenue (2019): $1.1 billion (TZS 2,703 billion).

9 General taxes are taxes that apply to all sectors of the economy such as VAT and corporation tax. Sector-specific taxes are taxes paid by mobile consumers and operators in addition to general taxes such as excise duty on mobile services and taxes on mobile sector revenue.

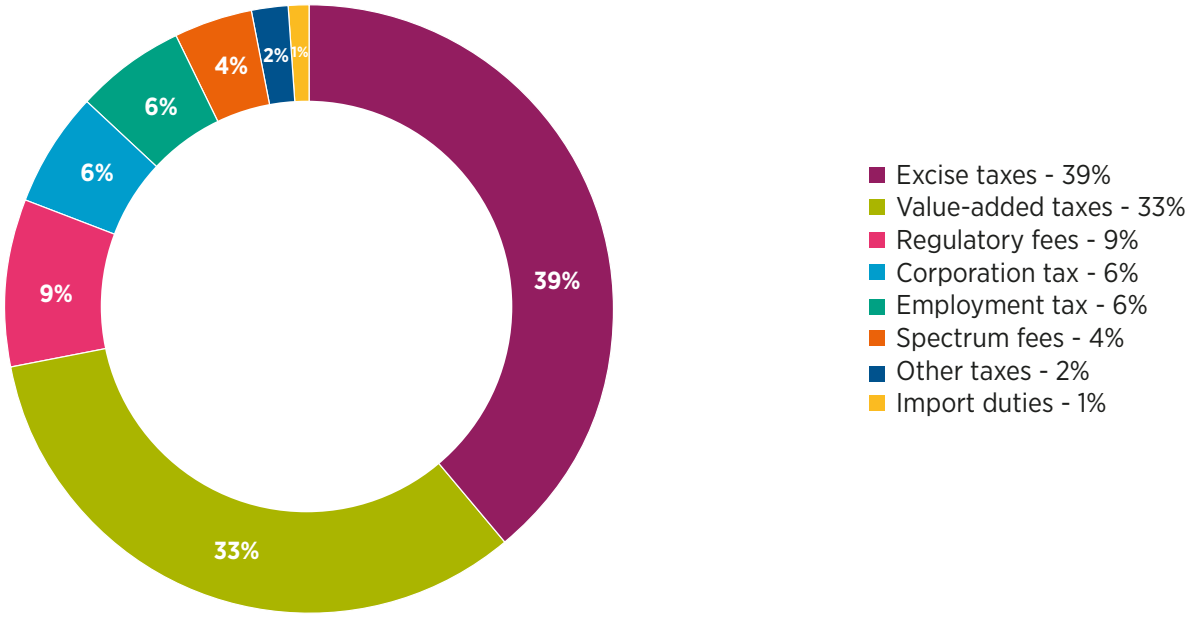
10 Tanzania (2019), regional averages (2017).

11 The net tax revenue during the financial year 2019-20 (from July 2019 until June 2020) was TZS 20,322 billion (US $8,810 million). Source: Tanzania Revenue Authority. The budget execution report for the fourth quarter of the financial year 2019/20.

Figure 4

Tax categories as a percentage of overall tax revenues from the mobile sector

Source: GSMA analysis and operator data.



2. Reform mobile taxation to unlock the agriculture and health sectors

This sections details how mobile technology impacts the agriculture and health sectors and how a reform of mobile-sector taxation can unlock the benefits derived from the digitalisation of the agriculture and health sectors. Based on the results of an economic impact model analysing the reduction of excise duty on mobile services from 17% to 12%, this section provides quantitative impacts for certain aspects of the agriculture and health sectors.

A reduction of the excise duty on mobile services reduces the effective price and increases investment by mobile operators to expand and upgrade their networks.[12] As a result, households and businesses increase their demand for mobile services and the economy expands due to the productivity effect. Higher mobile penetration leads to growth in productivity and hence an increase in GDP, household incomes, employment and investment across the economy. Due to the expansion of the mobile sector and subsequent growth in the wider economy, government revenues increase. Although a reduction in tax has an initial cost for the government, the government can recover this in the medium term through the resulting expansion in the mobile industry and the rest of the economy. The agriculture, health and education sectors are examples of industries that benefit from an increase in mobile connectivity.

2.1 Impact of the mobile sector on the economy: The cases of agriculture and health

Mobile services, including mobile money, are the main drivers of digital and financial inclusion, providing enormous benefits through their positive impact on social and economic growth. Against the backdrop of COVID-19, mobile services and mobile money services are essential components of a resilient society and economy. In its national strategy, Tanzania Vision 2025, the government of Tanzania recognises the telecommunication sector as an important enabler of socioeconomic development. Government initiatives such as the National ICT Broadband Backbone (NICTBB) project and Tanzania Vision 2025 have facilitated the development of mobile infrastructure across the country.

Mobile connectivity affects the economy positively through its impact on productivity and GDP. In 2019, mobile technologies and services generated 9% of GDP in Sub-Saharan Africa, and the mobile ecosystem supported almost 3.8 million jobs, directly and indirectly.[13] In 2016, Tanzanian mobile operators contributed around $2.5 billion in total value added (5.2% of GDP), taking into account direct, indirect and productivity effects.[14]

Beyond the mobile ecosystem itself,[15] mobile technologies enable the growth and digital transformation of other sectors such as agriculture and health. The digital transformation of these sectors directly contributes to Tanzania's economic growth and social development objectives as set out in the Second National Five Year Development Plan. In particular, it contributes to poverty reduction (objective 5) and improved quality of life and human wellbeing (objective 6).[16]

In Tanzania, information on agricultural best practices has traditionally been transmitted through agricultural extension officers and farmer-to-farmer interactions.[17] However, this is often an inefficient process, as farmers in rural areas can be widely dispersed and their information needs can vary considerably[18] Through SMS, data and voice services, mobile devices can overcome these barriers by rapidly and efficiently providing farmers in rural areas with market price information, weather forecasts and agronomic advice on different crops. The resulting information not only allows smallholder farmers to access new markets, but it improves crop management and increases experimentation with new crops and agricultural techniques, increasing agricultural yields and, consequently, farmer income and welfare.

In a similar way, mobile adoption is also positively associated with better health outcomes. By improving communication between health practitioners and their patients, mobile connectivity supports increased treatment adherence and facilitates telemedicine for patients living in remote areas. Moreover, by facilitating access to health information, mobile connectivity leads to increased health literacy and more mothers receiving pregnancy and postpartum advice.

12 Effective prices represent the value for money achieved by subscribers; effective price changes are therefore wider ranging than pure price changes. The effective price subscribers face can be said to decrease if they receive a better quality or quantity of service for the same price.

13 GSMA (2020). The mobile economy Sub-Saharan Africa 2020.

14 GSMA (2019). Digital transformation in Tanzania.

15 The mobile ecosystem consists of mobile operators, infrastructure service providers, retailers and distributors of mobile products and services, handset manufacturers, and mobile content, application and service providers.

16 The United Republic of Tanzania (2016). National five year development plan 2016-17 – 2020/21.

17 Food and Agriculture Organisation of the United Nations (2016). e-Agriculture Promising Practice.

18 Mwalukasa (2020). Mobile phone use in accessing rice information for adaptation to climate change in Kilosa and Kilombero districts, Morogoro, Tanzania.

Table 2

Impact of mobile connectivity on agriculture and health

Agriculture	
Impact	Description
Higher production	In Kenya, a digital platform run on mobile phones allows farmers and buyers to transact directly. A 2014 study found that the land productivity of smallholder farmers using the service increased by at least KSh 7,007. The digital market information service improved access to markets for farmers, increased the use of improved seeds by at least KSh 285 per acre and stimulated the use of fertilizers.[19]
Higher income and cost savings	In Tanzania, users of an agriculture value-added service pilot were 39% more likely to report increased income in a given year than those who did not. The service used Unstructured Supplementary Service Data (USSD), push SMS subscriptions, Interactive Voice Response (IVR) and a helpline to provide farmers with market information, weather forecasts and agronomic advice on ten major crops.[20] In Tanzania, the agricultural exporter Multiflower found that switching to bulk mobile money payments from individual cash payments led to efficiencies and cost savings. Farmers could receive loans and payments directly via their mobile phone, saving travel time and cost to collect cash payments. It is estimated that 300 farmers saved about $8,000 and 6,000 hours.[21] In Uganda, coffee farmers who used mobile money were found to receive 7% higher prices for their coffee than non-users, on average, because they could reach buyers in high-value markets rather than selling to local traders immediately after harvest. The use of mobile money would increase total household income by 19%.[22]
Improved farming practices	In Malawi, almost 70% of active users of M'Chikumbe 212 reported making at least one type of farm-related change. This agriculture value-added service provides farmers access to practical farming information via Interactive Voice Response (IVR) and SMS services. Almost half (48%) of active users reported a change in planting, 39% a change in land management and 44% in harvesting or post-harvest practices.[23]

19 Ogutu (2014). Impact of information and communication technology-based market information services on smallholder farm input use and productivity: the case of Kenya.
20 GSMA (2015). Tigo Kilimo Impact Evaluation.
21 Seetharam, B. and Johnson, D. (2015). Mobile Money's Impact on Tanzanian Agriculture. IEEE Software.
22 Sekabira, H. and Qaim, M. (2017). Mobile money, agricultural marketing, and off-farm income in Uganda.
23 GSMA (2017). M'chikumbe 212.

Health	
Impact	Description
Improved nutrition knowledge and behaviours	In Tanzania, the text messaging service 'Healthy Pregnancy, Healthy Baby' improved the nutrition of newborns by providing mothers with information on child development best practices as well as reminders on essential healthcare services. 73% of experienced service users implement appropriate breastfeeding practices, compared to 64% of non-users.[24]
Increased attendance to health maternal and infant care visits	In South Africa, a study showed that pregnant women receiving SMS health information messages were 71% more likely than control participants to attend all recommended antenatal and postnatal visits and first-year vaccinations. Text messages were sent twice a week during pregnancy and one year after birth.[25]
Increased appointment attendance	In South Africa, an SMS-based appointment reminder system managed to decrease missed HIV appointments by 87%.[26]

24 GSMA (2018). Healthy pregnancy, healthy baby.

25 Coleman (2020). Evaluating the effect of maternal mHealth text messages on uptake of maternal and child health care services in South Africa: a multicentre cohort intervention study.

26 World bank (2012). Mobile Applications for the Health Sector.

2.2 Impact of excise duty reduction from 17% to 12% on the Tanzanian economy

In addition to VAT (18%), Tanzania applies a 17% excise duty on mobile airtime, which increases the cost for mobile users. An economic impact analysis reveals that reducing the excise duty from 17% to 12% would have a net-positive macroeconomic impact both on the mobile sector and the wider economy.[27] Five years after the tax reform, mobile penetration would have increased by 3.6% and GDP would have increased by $438 million.[28] The figure below presents the main impacts on the mobile sector and the Tanzanian economy.

The phased reduction of excise duty on mobile airtime from 17% to 12% would improve affordability of mobile services for households and businesses. As a result, an additional 2.4 million Tanzanian citizens (+3.6%) would be connected to mobile services. Of these, 87% would be classified as low income.

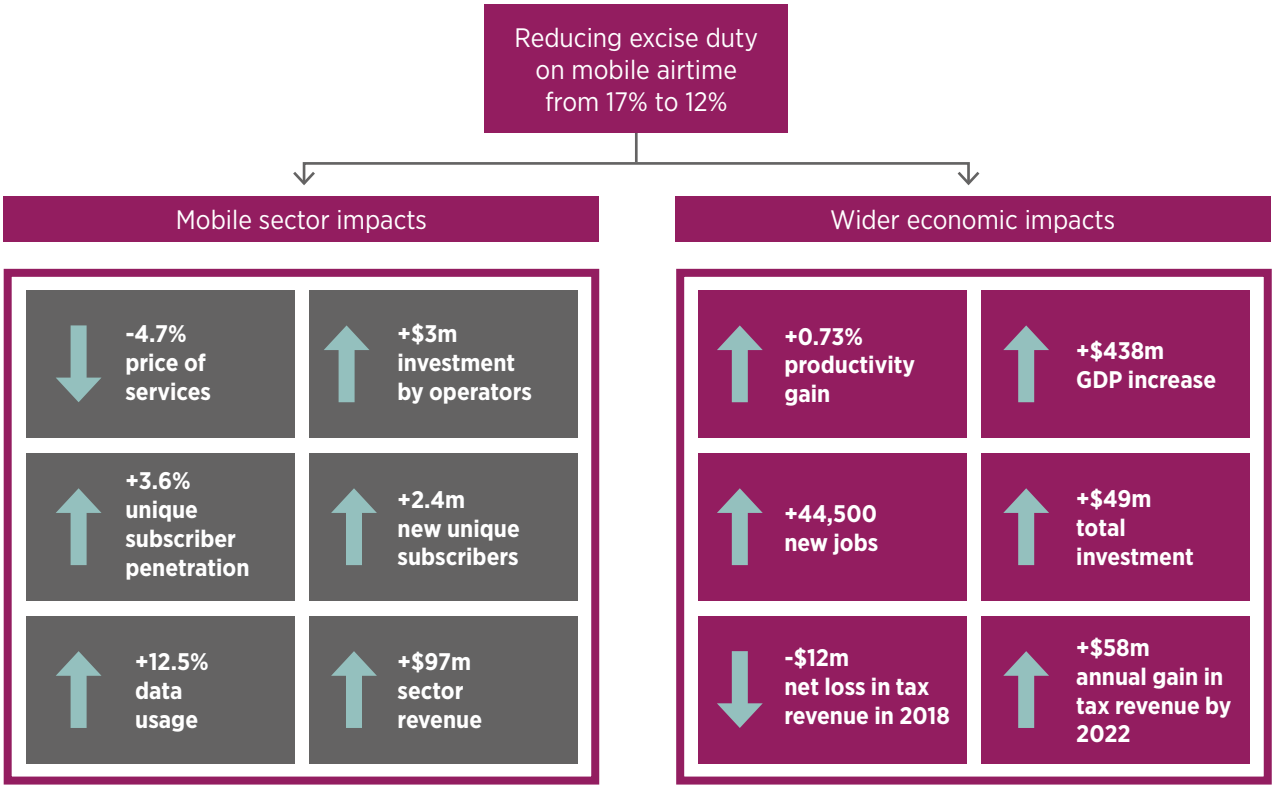
The tax reform would unlock additional investment by the mobile sector and by the wider economy. Following the excise duty reduction, mobile network operators would increase their investment by about $3 million per annum to increase network coverage and network quality. Furthermore, as a result of increased affordability of mobile services and increased productivity, additional resources would be made available for investment across the economy. The tax reform would generate an annual increase in investment of $49 million (1.42%). Employment would increase by approximately 44,500 jobs (0.2%).

In terms of tax revenue, the tax reform would have a net-positive impact. While the excise duty reduction would represent an initial cost of $12 million, the Tanzanian Exchequer would benefit from an annual gain in tax revenue of about $58 million per annum, five years after the reform. This increase in tax revenue would result from the expansion of the mobile sector and significant growth in the wider economy. Two years after the reform, the annual and cumulative impact on tax revenue would already be in positive numbers.

Figure 5

Annual impacts of a reduction in excise duty on mobile airtime[29]

Source: GSMA analysis



2.3 Impact of excise duty reduction from 17% to 12% on agriculture and health sectors

Key sectors of the economy such as the agriculture and health sector would benefit from the increased penetration of mobile services resulting from the excise duty reduction. Based on the impacts presented above and based on existing literature, this section models selected impacts of the excise duty reduction on the agriculture and health sectors.[30]

Mobile is at the centre of Tanzania's agriculture sector digital transformation. To achieve its objectives, Tanzania's Second National Development Plan includes the use of ICT to increase agriculture productivity.[31] Similarly, the Digital Health Strategy (2019-2024) highlights how digital technologies have the potential to address health system issues.[32]

Impact of excise duty reduction on rural household consumption, including farmers

Mobile connectivity benefits smallholder farmers by giving them access to services that provide market price information, weather forecasts and remote payment using mobile money. According to a World Bank study (2009), farmers purchasing a mobile phone experienced a rise of per capita consumption ranging from 11% to 17%.[33] This positive relationship is in line with other studies demonstrating direct and indirect impacts of mobile connectivity on rural household consumption and income.[34] According to Wangling (2018), the use of smartphones by farmers in rural China increases farm income by 10.71% and household income by 14.11%.[35]

The reduction of excise duty on mobile services from 17% to 12% would lead to an additional 1.6 million new mobile internet users from rural areas. Based on the findings of Wangling, the households of these new rural users, most of whom would be farmers, would see their monthly consumption increase by TZS 71,700 (14% increase).[36] This would result from the access to new markets, improved crop management and experimentation with new crops, all enabled by their mobile phones. At the country level, the average rural household consumption would increase by TZS 10,600 (2.1% increase).

27 Findings presented under this sub-section are the results of an economic impact analysis led by the GSMA.

28 The economic impact analysis models the impact of a phased reduction in excise duty on mobile airtime from 17% to 12%: a temporary rate of 15% in 2018 and a rate of 12% from 2019 onwards. This section presents tax reform impacts compared to a baseline scenario of no change in levels of taxation. All results presented in this section are impacts achieved five years after the tax reform.

29 The figure above presents the annual impacts five years after the tax reform (2022), assuming that the reform took place in 2018.

30 In alignment with the economic impact analysis presented above, it is assumed that the tax reform took place in 2018. Impacts reported are impacts of 2022, five years after the tax reform. For more detail on the methodology, please see appendix.

31 The United Republic of Tanzania (2016). National five year development plan 2016-17 – 2020/21, p. 54.

32 The United Republic of Tanzania (2019). Digital Health Strategy.

33 World Bank (2009). The Power of Information, The Impact of Mobile Phones on Farmers' Welfare in the Philippines.

34 See for example: World Bank (2020). The welfare effects of mobile broadband internet. Sekabira, H., & Qaim, M. (2017). Mobile money, agricultural marketing, and off-farm income in Uganda. Agricultural Economics, 48(5), 597–611. Beuermann, D. et al. (2012). Mobile phones and economic development in rural Peru.

35 Wangling (2018). Smartphone use and income growth in rural China: empirical results and policy implications.

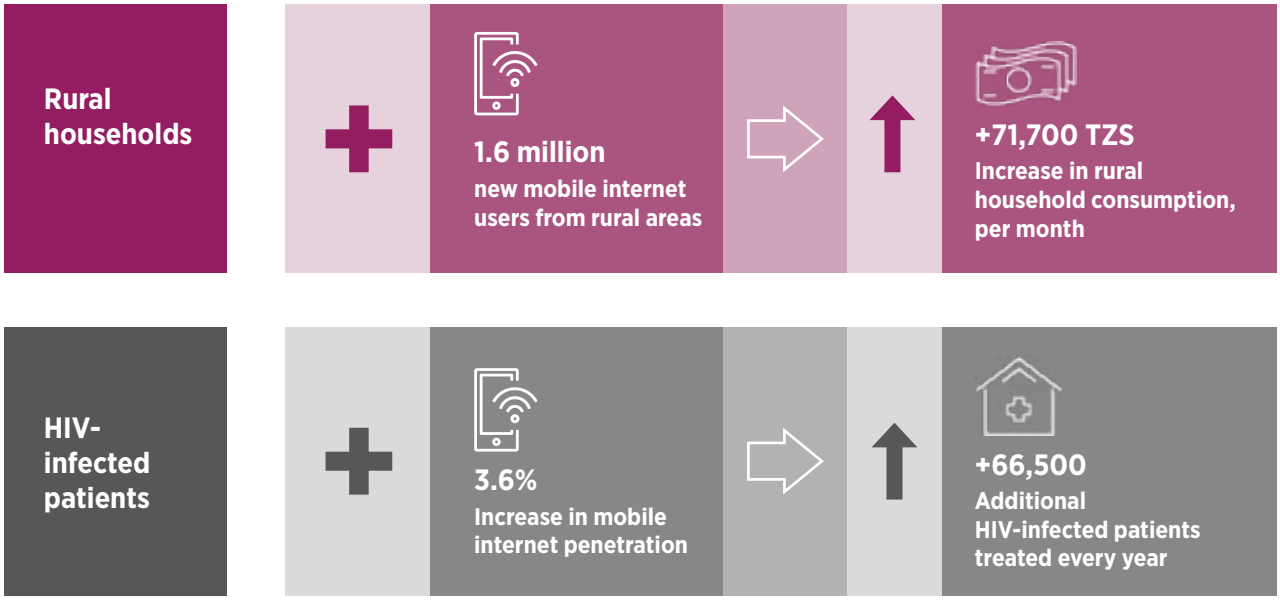
36 It is assumed that farmer household income equals rural household consumption. For more details on the methodology see appendix.

Impact of excise duty reduction on health services
The development of health services is improving and accelerating with the launch of new digital health technologies and wider access to connectivity. The reduction of excise duty on mobile airtime would improve digital inclusion, which would in turn benefit the development of digital health services.

According to Analysys Mason (2020), a 1% increase in internet take-up should result in an additional 1.26% of HIV-infected people receiving treatment.[37] The reduction of excise duty on mobile services from 17% to 12% would lead to an increase in mobile internet penetration by 3.6%, or about 2.4 million new users across Tanzania. As a result, by improving access to health information and communication between health practitioners and their patients, the number of HIV-infected patients receiving a treatment would increase by about 66,500 per year.

Figure 6

Impacts of a reduction of excise duty on mobile services from 17% to 12%



2.4 Call to action: Tax reform priorities

The mobile sector plays an important role in the transition to a digital economy and its development contributes to the achievement of Tanzania's objectives set out in Tanzania Vision 2025.

Reforming mobile sector taxation has the potential to accelerate Tanzania's transition to a digital economy. A reduction or elimination of sector-specific taxes would not only impact the mobile industry, but it would also have positive effects on the wider economy, including sectors such as agriculture and health. By improving affordability and supporting network investment, the reduction of sector-specific taxes directly contributes to reducing the usage gap and coverage gap.

To increase digital inclusion and boost the economy through the productivity impact, the following tax reform should be prioritised:

- Reduce the excise duty on mobile services
- Reduce the excise duty on mobile money transaction fees

37 Analysys Mason (2020). The Impact of Facebook's connectivity initiatives in Sub-Saharan Africa.

Appendix

Appendix - Methodology

The impact on the agriculture and health sectors is calculated using the results of an economic impact analysis. This analysis estimates the five-year effect of a phased reduction in the excise duty on mobile airtime from 17% to 12%, being first reduced to 15% in 2018 and to 12% in 2019. Our model uses outputs of the EY analysis such as the incremental number of total connections, 3G and 4G connections and unique subscribers to construct scenarios for each of the metrics evaluated: rural household consumption, and number of HIV patients receiving ATR treatment.

(1) Consumption Impact Scenario

Assuming a linear evolution of the consumption increase rate, the baseline rural household consumption for 2022 is estimated based on the figures given by Tanzania's Household Budget Surveys.[38] Using the relations given by Wangling (2018)[39] which estimates that smartphone use increases rural household income by 14.11% and assuming that all new 3G/4G unique subscribers belong to different households in rural areas and that the impact is materialised after the first year, the number of benefitted households and their consequent increase in consumption is calculated. In doing so, only new 3G and 4G unique subscribers are considered and migrations from 2G to 3G and 4G are excluded to avoid counting households whose income might have already benefited from using 2G. The impact derived from smartphone ownership is assumed to materialise within the second year of smartphone adoption. It is also assumed that all 3G/4G subscribers are owners of a smartphone and that household consumption can be equated to household income. The latter implies that households in rural areas have no savings; an assumption commonly made in the literature.[40] Finally, the impact on the overall rural household consumption is calculated through a weighted average.

(2) HIV Treatment Scenario

Similarly, the baseline number of patients receiving HIV treatment for 2022 is estimated using data from UNAIDS (2019)[41] and assuming that the number of HIV patients receiving treatment increases linearly at the average rate seen between 2013 and 2019. The number of additional patients receiving treatment compared to the baseline scenario is obtained by assuming that a 1% increase in internet take-up results in an additional 1.26% of HIV-infected people receiving treatment as captured by Analysys Mason (2020).[42] In doing so, it is assumed that internet take-up is fully driven by mobile broadband subscriber penetration and that the impact is materialised within the second year of using internet services.

38 Tanzania National Bureau of Statistics (2019). The 2017-18 Household Budget Survey: Key Indicators Report and Tanzania National Bureau of Statistics (2014). The 2011-12 Household Budget Survey: Main Report.

39 Wangling (2018). Smartphone use and income growth in rural China: empirical results and policy implications.

40 See: Wangling (2018), Smartphone use and income growth in rural China: empirical results and policy implications; Khanal and Mishra (2016), Financial performance of small farm business households: the role of internet.

41 UNAIDS (2019). AIDSinfo.

42 Analysis Mason (2020). The Impact of Facebook's connectivity initiatives in Sub-Saharan Africa.

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